

WHAT IS CLAIMED IS:

1. An image processing apparatus comprising:  
image obtaining unit, adapted to obtain image  
data from a recording medium on which the image data  
5 has been recorded;  
face region extraction unit, adapted to extract  
a face region of a person from the image data  
obtained by said image obtaining unit;  
image feature amount calculation unit, adapted  
10 to calculate an image feature amount of the face  
region extracted from the image data by said face  
region extraction unit;  
correction effect inference unit, adapted to  
infer whether or not a correction effect can be  
15 obtained by correcting a characteristic of the image  
data, based on the image feature amount calculated by  
said image feature amount calculation unit, and to  
output a first inference result based on the  
inference; and  
20 image correction unit, adapted to, in a case  
where it is inferred by said correction effect  
inference unit that the correction effect can be  
obtained based on the first inference result, correct  
the characteristic of the image data based on the  
25 image feature amount and thus output post-correction  
image data.

2. An image processing apparatus according to  
Claim 1, wherein

a photographing apparatus for photographing a subject and thus obtaining the image data includes  
5 plural kinds of photographing modes, a person mode which is optimum to photograph the person is included in the plural kinds of photographing modes, and, in a case where photographing information including information concerning the photographing mode has  
10 been recorded together with the image data on the recording medium, said image obtaining unit obtains the photographing information together with the image data from the recording medium, and  
said image processing apparatus further  
15 comprises

photographing mode discrimination unit, adapted to discriminate whether or not the photographing mode included in the photographing information obtained by said image obtaining unit is the person mode, and  
20 correction process control unit, adapted to, only in a case where it is discriminated by said photographing mode discrimination unit that the photographing mode is the person mode, control said face region extraction unit, said image feature amount calculation unit, said correction effect inference unit and said image correction unit to perform a correction process of the image data.

3. An image processing apparatus according to  
Claim 1, wherein said image feature amount  
calculation unit calculates at least an area of the  
face region as the image feature amount, and  
5       said correction effect inference unit infers  
the correction effect from the area of the face  
region calculated by said image feature amount  
calculation unit and thus outputs the first inference  
result.
- 10
4. An image processing apparatus according to  
Claim 1, further comprising face region correction  
unit, adapted to, in a case where it is inferred by  
said correction effect inference unit that the  
15 correction effect can be obtained based on the first  
inference result, correct a characteristic of the  
face region and thus output post-correction face  
region data by using the image feature amount of the  
face region,
- 20       wherein said image feature amount calculation  
unit further calculates a post-correction image  
feature amount being an image feature amount of the  
post-correction face region data output by said face  
region correction unit,
- 25       said correction effect inference unit further  
infers whether or not the correction effect can be  
obtained and thus outputs a second inference result,

by comparing the image feature amount before the correction with the post-correction image feature amount after the correction both calculated from the same face region by said image feature amount

5 calculation unit and then correcting the compared result, and

in a case where it is inferred by said correction effect inference unit that the correction effect can be obtained based on the second inference  
10 result, said image correction unit corrects the characteristic of the image data based on the image feature amount and then outputs the post-correction image data.

15 5. An image processing apparatus according to Claim 4, wherein the image feature amount and the post-correction image feature amount are statistical distributions of pixel data in the face region.

20 6. An image processing apparatus according to Claim 5, wherein the statistical distribution of the pixel data is a lightness histogram indicating a distribution of lightness of each pixel or a hue histogram indicating a distribution of hue of each  
25 pixel.

7. An image processing apparatus according to

Claim 4, wherein said image correction unit corrects the characteristic of the image data by using a parameter used in the correction by said face region correction unit.

5

8. An image processing method comprising:

a first step of obtaining image data from a recording medium on which the image data has been recorded;

10 a second step of extracting a face region of a person from the image data obtained in said first step;

a third step of calculating an image feature amount of the face region extracted from the image  
15 data in said second step;

a fourth step of inferring whether or not a correction effect can be obtained by correcting a characteristic of the image data, based on the image feature amount calculated in said third step, and of  
20 outputting a first inference result based on the inference; and

a fifth step of, in a case where it is inferred in said fourth step that the correction effect can be obtained based on the first inference result,  
25 correcting the characteristic of the image data based on the image feature amount and thus outputting post-correction image data.

9. An image processing method according to  
Claim 8, further comprising:

- a face region correction step of, in a case where it is inferred in said fourth step that the
- 5 correction effect can be obtained based on the first inference result, correcting a characteristic of the face region and thus outputting post-correction face region data by using the image feature amount of the face region;
- 10 a feature amount calculation step of calculating a post-correction image feature amount being an image feature amount of the post-correction face region data output in said face region correction step; and
- 15 a correction effect inference step of inferring whether or not the correction effect can be obtained and thus outputting a second inference result, by comparing the image feature amount before the correction with the post-correction image feature amount after the correction both calculated from the same face region respectively in said second step and said image feature amount calculation step and then correcting the compared result,
- 20

wherein, in a case where it is inferred in said 25 correction effect inference step that the correction effect can be obtained based on the second inference result, said fifth step corrects the characteristic

of the image data based on the image feature amount and then outputs the post-correction image data.

10. A computer-readable recording medium which  
5 records a program for causing a computer to execute:

a first step of obtaining image data from a recording medium on which the image data has been recorded;

10 a second step of extracting a face region of a person from the image data obtained in said first step;

a third step of calculating an image feature amount of the face region extracted from the image data in said second step;

15 a fourth step of inferring whether or not a correction effect can be obtained by correcting a characteristic of the image data, based on the image feature amount calculated in said third step, and of outputting a first inference result based on the 20 inference; and

a fifth step of, in a case where it is inferred in said fourth step that the correction effect can be obtained based on the first inference result, correcting the characteristic of the image data based 25 on the image feature amount and thus outputting post-correction image data.

11. A computer-readable recording medium according to Claim 10, further recording a program for causing the computer to execute:

a face region correction step of, in a case  
5 where it is inferred in said fourth step that the correction effect can be obtained based on the first inference result, correcting a characteristic of the face region and thus outputting post-correction face region data by using the image feature amount of the  
10 face region;

a feature amount calculation step of calculating a post-correction image feature amount being an image feature amount of the post-correction face region data output in said face region  
15 correction step;

a correction effect inference step of inferring whether or not the correction effect can be obtained and thus outputting a second inference result, by comparing the image feature amount before the  
20 correction with the post-correction image feature amount after the correction both calculated from the same face region respectively in said second step and said image feature amount calculation step and then correcting the compared result; and

25 an output step of, in a case where it is inferred in said correction effect inference step that the correction effect can be obtained based on

the second inference result, correcting the characteristic of the image data based on the image feature amount and then outputting the post-correction image data.

5

12. A program for causing a computer to execute:

a first step of obtaining image data from a recording medium on which the image data has been  
10 recorded;

a second step of extracting a face region of a person from the image data obtained in said first step;

a third step of calculating an image feature  
15 amount of the face region extracted from the image data in said second step;

a fourth step of inferring whether or not a correction effect can be obtained by correcting a characteristic of the image data, based on the image  
20 feature amount calculated in said third step, and of outputting a first inference result based on the inference; and

a fifth step of, in a case where it is inferred in said fourth step that the correction effect can be  
25 obtained based on the first inference result, correcting the characteristic of the image data based on the image feature amount and thus outputting post-

correction image data.

13. A program according to Claim 12, for further causing the computer to execute:

5        a face region correction step of, in a case where it is inferred in said fourth step that the correction effect can be obtained based on the first inference result, correcting a characteristic of the face region and thus outputting post-correction face  
10      region data by using the image feature amount of the face region;

          a feature amount calculation step of calculating a post-correction image feature amount being an image feature amount of the post-correction  
15      face region data output in said face region correction step;

          a correction effect inference step of inferring whether or not the correction effect can be obtained and thus outputting a second inference result, by  
20      comparing the image feature amount before the correction with the post-correction image feature amount after the correction both calculated from the same face region respectively in said second step and said image feature amount calculation step and then  
25      correcting the compared result; and

          an output step of, in a case where it is inferred in said correction effect inference step

that the correction effect can be obtained based on  
the second inference result, correcting the  
characteristic of the image data based on the image  
feature amount and then outputting the post-  
5 correction image data.